

REMARKS/ARGUMENTS

Claims 1-20 have been rejected under 35 U.S.C. 103(a) as being obvious over Polykarpov et al. (US 6,080,530 A) in view of Orr et al. (US 4,879,287 A) and Stead et al. (US 5,496,891 A). The Examiner states that Polykarpov teaches all the limitations of the instant claims except the use of a carboxyvinyl polymer in the aqueous phase as set forth in the instant claims. The Examiner then states that

“Polykarpov does however teach that particularly preferred encapsulation systems include pectin and sulfonated polystyrene as system modifiers (c. 8, 1. 4-27). System modifiers are well known in the art. Their selection depends on the type of microencapsulation process used and the nature of the wall formers. Therefore, one of ordinary skill in the art would have been motivated to use any emulsifiers or system modifier, which is well known and conventional in the art of microencapsulation. Orr et al. (US 4,879,287 A) teaches that thickening agents maybe (a) natural products such as tragacanth, pectin or alginic acid or (2) synthetic or semi-synthetic compounds such as methylcellulose and carboxypolymethylene (CARBOPOL) (c. 3, 1. 1-15). Orr serves to equate pectin (polygalacturonic acid methyl ester) and carboxypolymethylene (CARBOPOL) in the art. Stead et al. (US 5496891 A) discloses in the background that polyacrylic acid cross-linked with (poly)vinyl pentaerythritol (also known as allyl sucrose and allyl pentaerythritol) have been sold since 1954 and are commercially available under the trademark CARBOPOL (c. 1,1.7-18). In light of the teachings of Orr that pectin (polygalacturonic acid methyl ester) and carboxypolymethylene (CARBOPOL) are known equivalents in the art of microencapsulation, one of ordinary skill in the art would have been motivated to substitute the exemplified pectin of Polykarpov for a synthetic compound such as CARBOPOL which is a polyacrylic acid cross-linked with (poly)vinyl sucrose or (poly)vinyl pentaerythritol (also known as allyl sucrose and allyl pentaerythritol) and expect reasonably similar results.”

Applicants respectfully traverse this rejection. As a threshold matter, the combination of Orr and Polykarpov is improper as they are nonanalogous art. The Examiner states that in light of the teachings of Orr, pectin (polygalacturonic acid methyl ester) and carboxypolymethylene (CARBOPOL) are known equivalents in the art of microencapsulation. Applicants disagree with this assertion. Polykarpov relates to a photosensitive microcapsule imaging

system. Orr relates to pharmaceutical compositions for topical application to the skin. There is no mention of microcapsules in Orr. The fact that two chemical compounds may be interchangeable in one system certainly does not guarantee that they will be interchangeable in an entirely different system, especially two systems as complex as the ones at issue. Image quality and good developability are essential to an imaging system. Many factors affect this criteria, such as aqueous phase viscosity, dispersibility, microcapsule particle size, sensitivity to process conditions, interaction with other chemicals in the microcapsules, and humidity resistance of the coated imaging layer, and such factors are very dependent on the types of polymeric compounds utilized in the microcapsule formation.

Obviously the aforementioned requirements do not need to be taken into account when one is making creams for topical application to the skin. Rather, totally different factors must be considered for a pharmaceutical cream; such as toxicity, spreadability, smell, appearance and interaction with the active ingredients. In light of these differences, the Examiner has provided no evidence that those skilled in the art of photosensitive microcapsule imaging systems would consider pectin and CARBOPOL to be equivalent.


Stead does not add anything to bolster the Examiner's statement in that it merely states that CARBOPOL has been available for a long time. In fact, this actually mitigates against the idea that it would be obvious to combine Orr and Polykarpov. Polykarpov cites U.S. Patent 4,962,010 as the basis for the statement that pectin may be used as a system modifier. U.S. Patent 4,962,010 issued October 9, 1990. Orr issued November 7, 1989. As noted by the Examiner CARBOPOL has been readily available since the 1950's. Yet, the current invention was not made until 2002, nearly twelve years after U.S. Patent 4,962,010 issued. Given the interest in the industry in developing dry imaging systems, particularly photosensitive microcapsule systems, this type of time lapse would indicated that the combination of Orr and Polykarpov is not obvious.

It should also be noted that pectin and polyacrylic acid polymers act differently in a microcapsule system. The polyacrylic acid polymers are far superior to pectin in at least two different parameters. Microcapsules made with

polyacrylic acid polymers have better particle size distribution and they exhibit reduced sensitivity to variations in humidity. Therefore, not only would one expect that pectin and polyacrylic acid polymers might act differently in a photosensitive microcapsulesystem, they in fact do act differently.

In light of the above remarks, Applicants respectfully request that the claims be allowed.

Respectfully submitted,


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If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Eastman Kodak Company Patent Operations at (585) 477-4656.